

**REMARKS**

Claim 1 has been amended to recite that the multi-branched polysaccharide skeleton consists of saccharides selected from the recited list of saccharides. Support for this amendment can be found at, for example, page 6, lines 17-28 of the specification. Claim 1 has also been amended from the term "derivative" to the term "compound." Claim 4 has been amended to depend from claim 1 and to clarify that the multi-branched polysaccharide compound comprises a polymer obtained by cation polymerization or anion polymerization. Support for this amendment can be found at, for example, original claim 2 and page 6, lines 10-13 and 29-30 of the specification.

Claims 2, 3, 8, 9, 12, 13, 17, and 18 are canceled.

Entry of the above amendment is respectfully requested.

**Preliminary Matter**

On page 2 of the Office Action, the Examiner indicates that the reference entitled "Arabinogalactan" was not considered because the Examiner was not provided with an English translation of the document.

In response, Applicants respectfully submit that the International Search Report filed September 28, 2006 constitutes a concise explanation of the relevance of this document as set forth in the sentence bridging pages 1-2 of the Information Disclosure Statement filed September 28, 2006 (see MPEP 609.04(a)III., which states: "Where the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office. This may be an explanation of

which portion of the reference is particularly relevant, to which claims it applies, or merely an 'X', 'Y', or 'A' indication on a search report.") Therefore, Applicants respectfully request that the Examiner consider the reference, "Arabinogalactan," to the extent possible and return a fully initialed PTO/SB/08 form with the next communication from the PTO.

**Rejection under 35 U.S.C. § 112**

On page 2 of the Office Action, claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite.

In response, Applicants have amended claim 1 to recite "compound" instead of "derivative." Applicants respectfully submit that this amendment obviates this rejection. Withdrawal of the rejection is respectfully requested.

**Rejection under 35 U.S.C. § 103 based on Kakuchi and Wang**

On pages 4-6 the Office Action, claims 1-20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kakuchi et al. (JP 2003-252904) ("Kakuchi") in view of Wang et al. (U.S. Patent No. 6,197,319) ("Wang").

In response, Applicants respectfully submit that Kakuchi and Wang do not render the presently claimed invention obvious, because there is no teaching, suggestion, motivation, or other reason to combine Wang with Kakuchi to reach the presently claimed invention. Kakuchi discloses polysaccharides for use as a viscosity improver, as a biologically compatible hydrogel, and a biologically compatible medical base material, but, as the Examiner concedes, Kakuchi does not explicitly disclose a multi-branching polysaccharide as useful for an external

preparation for the skin or a cosmetic, which is required by the presently claimed invention. See Abstract of Kakuchi and page 7, third paragraph of the Office Action.

One the other hand, Wang discloses a cosmetic composition containing a protein polysaccharide complex (so-called "PPC" in Wang). See Abstract of Wang. In the background of the invention, Wang mentions that polysaccharides may tend to provide a heavy, sticky feeling on the skin and, when used in quantities sufficient to cause gelling, may provide products which are not aesthetically pleasing, which suggests disadvantages for use in cosmetics. See column 1, lines 18-21 of Wang. Wang et al. developed their invention in order to solve these problems by using a complex of protein and polysaccharides. Therefore, one of ordinary skill in the art would not be motivated to combine the teachings of Wang with Kakuchi to reach the multi-branched polysaccharide compound of present claims 1, 4-7, 10, 11, 14-16, 19, and 20.

Claims 2, 3, 8, 9, 12, 13, 17, and 18 have been canceled; therefore, Applicants respectfully submit that the above amendment obviates the above rejection with respect to these claims.

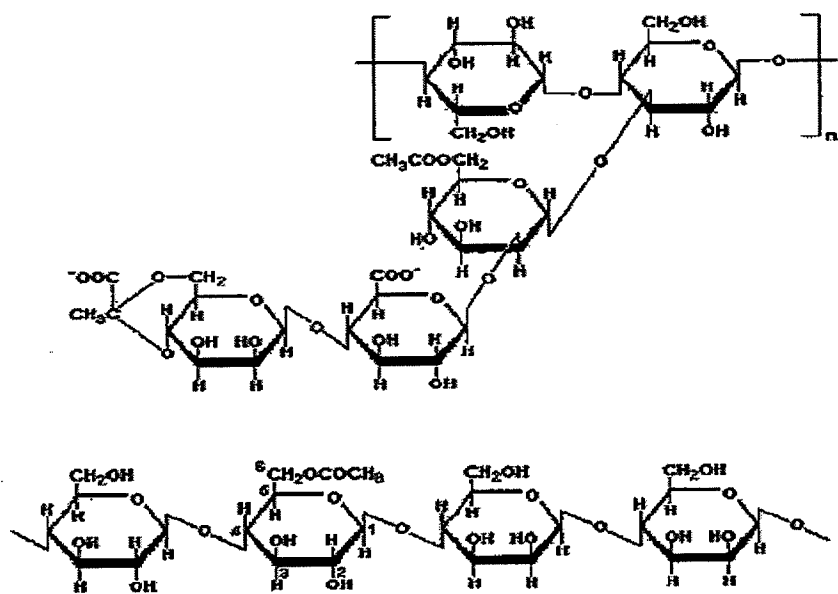
**Rejection under 35 U.S.C. § 103 based on Kasuya and Dederen**

On pages 7-9 of the Office Action, claims 1-20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kasuya et al. (Macromolecules, 1999, 32, 2131-2136) ("Kasuya") in view of Dederen et al. (U.S. Patent Publication 2002/0065328) ("Dederen").

In response, Applicants respectfully submit that the compounds of Kasuya and Dederen do not render claims the presently claimed invention obvious, because the compounds of Kasuya and Dederen do not teach all the requirements of the present claims.

Kasuya discloses a method for chemical synthesis of a comb-shaped polysaccharide, wherein anhydrodisaccharide 4 in Scheme 1 in the right column at page 2131 of Kasuya is used as a monomer. This monomer is a totally different compound from the anhydrosaccharide defined in the presently claimed invention. See present claim 1. Therefore, the polysaccharide of Kasuya is a different substance from the multi-branched polysaccharide compound of the presently claimed invention.

Though Dederen describes Xanthan polysaccharide and polyglucomannan polysaccharide, these polysaccharides are polysaccharides with a Xanthan or glucomannan skeleton represented by the following formulae:



See paragraphs [0010] and [0011] of Dederen. Xanthan comprises a main chain wherein the repeating unit comprises glucose, whereas glucomannan comprises glucose and mannose. The Xanthan and glucomannan main chains are substantially linear with short pendant side chains, where the short pendant side chains are not further branched. In contrast, “multi-branched”

polymers are understood by one of ordinary skill in the art to have a tree-like structure, with no clearly distinguishable main chain (see, e.g., the paragraph bridging pages 5-6 in the present specification).

Generally, a polymer having a linear chain has higher viscosity and can expect effects as a thickener or an emulsion stabilizer. Xanthan and glucomannan have just such a structure. Consequently, it is evident that the polysaccharides of Dederen are **not** those of the presently claimed invention.

Since neither Kasuya nor Dederen discloses or suggests the multi-branched polysaccharide of the presently claimed invention, present claims 1, 4-7, 10, 11, 14-16, 19, and 20 are not rendered obvious based on the teachings of Kasuya and Dederen.

Claims 2, 3, 8, 9, 12, 13, 17, and 18 have been canceled; therefore, Applicants respectfully submit that the above amendment obviates the above rejection with respect to these claims.

### **Unexpected Results**

The presently claimed invention solves the problems of polysaccharides which have been considered unfit for use as a preparation for skin.

The properties of the presently claimed invention find support in the Examples. Particularly, as is clear from the comparison of 1-1 in Table 2 below (multi-branched polysaccharide of the presently claimed invention) and 1-2 (Glycogen), or the comparison of 3-1 in Table 7 below (multi-branched polysaccharide of the presently claimed invention) and 3-2 (Hydroxyethylcellulose and Xanthan gum), unexpected effects in "moisture feeling after the skin dried" and "taut feeling after the skin dried" are exhibited in the case where the multi-branched

polysaccharide compound defined by the presently claimed invention is used compared to the case where the other polysaccharides are used. See also Table 1, page 32 and Table 6, page 34 of the specification.

Table 2

Sample	1-1	1-2	1-3
Moisture feeling immediately after applying	9	8	2
Moisture feeling after the skin dried	8	4	0
Taut feeling immediately after applying	0	0	0
Taut feeling after skin dried	1	6	9

From page 32 of the specification.

Table 7

Sample	3-1	3-2	3-3
Moisture feeling immediately after applying	9	8	5
Moisture feeling after the skin dried	7	5	0
Taut feeling immediately after applying	0	0	1
Taut feeling after skin dried	1	7	6

From page 35 of the specification.

In view of these unexpected results, Applicants respectfully submit that the presently claimed invention is not rendered obvious by the cited references.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

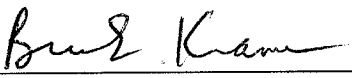
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